

DRS Oct 25th

Least Squares Polynomial Fit

LSF

(a) Calling linkage :

L	100	8	[L+2]	3ff	35f
L+1	—	5	—	—	001
L+2	—	0	00n	00m	—

where n = degree of polynomial to be fit (max $n = 10$)

m = no of x, y pairs.

If $m > n+1$ the polynomial is an approximation, if $m = n+1$ the polynomial is an exact fit, and if $m \leq n$, the program halts in PAT

(b) Storage

program 001 to 0e2 inclusive, plus matrix & solution allocators as follows:

0f7 to 17a	matrix storage	}	max. values corresponding to $n = 10$
320 to 335	operational storage		
340 to 34a	polynomial coefficients		
352 to 35f	operational storage		

Space for the calling sequence may thus only be available from 0e3 to 0f6

(a) Method of operation Normal Matrix & Crout Reduction.

(d) Additional Routines Required Con-decon

(e) Accuracy Dependent upon distribution of x, y pairs.

(f) Range & Form of Variable The data should follow the calling sequence in decimal x, y pairs i.e. $x_1, y_1, x_2, y_2 \dots x_m, y_m$

The routine prints the coefficients in the order a_0, a_1, \dots, a_n corresponding to the polynomial $a_0 + a_1 x + \dots + a_n x^n = 0$ and transfers to PAT (location 180 hex)

(g) Time of Operation Depends on m principally
For $m = 11, n = 5$ $t = 1.6$ mins including conversion & deconversion.